# DirectDSP API Partial Summary

Below is a partial summary of function calls in the DirectDSP software package:

**Low-Level Functions**

*Board and processor control, board register and peripheral access, block memory transfers, COFF file download, IEEE-to-DSP conversion*

DSInitBoard
DSResetBoard, DSResetProcessor
DSRunBoard, DSRunProcessor
DSHoldBoard, DSHoldProcessor
DSDisableBoard

DSLoadFileProcessor, DSLoadFileBoard

DSPutMem
DSGetMem
DSPutDSPProperty
DSGetDSPProperty

DSWriteBoardReg
DSReadBoardReg

DSIEEEToDSP
DSDSPToIEEE

**Autocalculation and Autodetection**

*autodetect board memory size and architecture, calculate nearest allowable sampling frequency*

DSGetBoardClass
DSCalcSampFreq
DSGetMemSize
DSGetSymbolAddress
DSGetMemArch

**Buffer and Semaphore Management**

*buffer-ready message callback window registration, wait for buffer*

DSRegisterEngineMsgWnd
DSWaitForBuffer
DSWaitForFlag
DSCancelWait

DSGetBufferInfo
DSGetFlagInfo

**Callback Messages**

*buffer- and flag-ready, status/error, and parameter callback messages*

WM_DSPENGINE_BUFRDY
WM_DSPENGINE_FLAGRDY

WM_DSPENGINE_ENGINESTATE
WM_DSPENGINE_FUNCTIONERR
WM_DSPENGINE_CODEGENERROR
WM_DSPENGINE_COMPILEERROR

WM_DSPENGINE_RUNTIMEERROR

WM_DSPENGINE_BUFSIZE
WM_DSPENGINE_SAMPFREQ
WM_DSPENGINE_BUFNUM
WM_DSPENGINE_AMPLEVEL

**Engine Management**

DSGetWordLength

**Hardware Management**

*hardware driver list management, pop-up hardware selector dialog box*

DSShowHardwareSelectorDialog

DSGetHWMgrNumEntries
DSGetHWMgrEntryIndex

DSGetHwMgrEntry, DSSetHWMgrEntry

**High-Level Functions**

*record .TIM waveform files, playback .TIM and .WAV waveform files, activate real-time filtering, stimulus & response measurement, continuous signal generation, exec arbitrary DSP functions*

DSAcquireWvfrmFile(CONVERSIONINFO FAR*)
DSGenerateWvfrmFile(CONVERSIONINFO FAR*)

**CONVERSIONINFO Structure**

waveform filename
number of channels, channel list
sampling rate
number of samples
output start sample index
gain / attenuation list
digital offset and digital scale
output repeat
input loopback
real-time filter 1 filename
real-time filter 2 filename
trigger mode, level, and delay
number of trigger channels,
trigger channel list
stimulus filename, mode, and delay

*DSP and board engine management, error/status window & reporting*

DSEngineOpen
DSEngineClose
DSGetEngineErrorStatus
DSGetEngineUsage
DSEngineSendCommand
DSSetEngineWaveformPath
DSSetEngineTemplatePath

DSShowEngMgrStatusWindow
DSAddEngMgrStatusLine
DSHideEngMgrStatusWindow

**Board and Processor Management**

*Board and processor handle allocation, get board info, get/set board I/O and memory base addresses, get/set bus type*

DSAssignBoard
DSFreeBoard

DSGetBoardInfo

DSAssignProcessor
DSFreeProcessor

DSGetBoardBaseAddr, DSSetBoardBaseAddr
DSGetBoardBusType, DSSetBoardBusType

**Memory Function Constants**

*DSGetMemArch,DSPutMem,DSGetMem constants*

DS_GMA_LINEAR
DS_GMA_HARVARD
DS_GMA_VECTOR

DS_GM_VECTOR_DATA_X
DS_GM_VECTOR_DATA_Y

```
DS_GM_LINEAR_PROGRAM
DS_GM_LINEAR_DATA

DS_GM_SIZE8
DS_GM_SIZE16
DS_GM_SIZE24
DS_GM_SIZE32
```